

WHAT IS CLAIMED IS:

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1. A network usage system having a multiple level distributed data storage system, the system comprising:
a set of first level network data collectors, wherein each first level network data collector receives network accounting data from a network data source, processes and stores the network accounting data at the first level network data collector; and
a second level network data collector, wherein the second level network data collector receives processed network accounting data from one or more first level network data collectors, processes and stores the network accounting data at the second level network data collector.
 2. The system of claim 1, further comprising a third level network data collector, wherein the third level network data collector receives processed network accounting data from the first level network data collector or the second level network data collector, processes and stores the network accounting data at the third level network data collector.
 3. The system of claim 2, further comprising an application interface which receives processed network accounting data from the first level network data collector, the second level network data collector, or the third level network data collector.
 4. The system of claim 1, wherein the first level network data collector includes a query manager, and wherein the second level network data collector is in communication with the first level network data collector via the query manager.

5. The system of claim 1, wherein the first level network data collector converts the network accounting data to a standard data format.

6. The system of claim 1, wherein each first level network data collector includes a first level data storage system and the second level network data collector includes a second level data storage system, for the storing processed network accounting data.

7. The system of claim 6, wherein the first level data storage system and the second level data storage system each include a processed data storage location, a metadata storage location and an error recovery information storage location, wherein the processed network accounting data is stored at the processed data storage location.

8. The system of claim 7, wherein after storing of the processed network accounting data, corresponding metadata is transferred to the metadata storage location and error recovery information is transferred to the error recovery information location.

9. The system of claim 6, wherein the first level data storage system includes a first level aging policy, wherein network accounting data is removed from the first level data storage system after a time period corresponding to the first level aging policy.

10. The system of claim 9, wherein the second level data storage system includes a second level aging policy different from the first level aging policy, wherein the network accounting data is removed from the second level data storage system after a time period corresponding to the second level aging policy.

11. A network usage system having a multiple level distributed data storage system, the system comprising:
- a first network data collector including a first encapsulator, a first aggregator, and a first data storage system;
 - 5 a second network data collector including a second encapsulator, a second aggregator, and a second data storage system; and
 - a data correlator collector including a third encapsulator, a third aggregator, and a third data storage system, wherein the third encapsulator is in communication with the first data storage system and the second data storage system.
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12. The system of claim 11, further comprising an aggregator collector including a fourth encapsulator, a fourth aggregator, and a fourth data storage system, wherein the fourth encapsulator is in communication with the third data storage system.
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13. The system of claim 11, wherein the first data collector receives network data from a network data source, and wherein the first aggregator processes the network data.
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14. The system of claim 13, wherein the processing of the network data includes the process of performing data reduction on the network data.
15. The system of claim 11, wherein the first data collector receives network data from a network data source, and wherein the first encapsulator converts the network data to a standard data format.
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16. The system of claim 11, wherein the first aggregator processes the network data providing aggregated data, and wherein the first aggregator includes a defined data transfer interval such that the first aggregator transfers the aggregated data to the first data storage system at the data transfer interval.
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17. The system of claim 16, wherein the data correlator collector includes a defined query interval, wherein the third encapsulator queries the first data storage system for the aggregated data at the query interval.

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18. The system of claim 17, wherein the data transfer interval is a multiple of the query interval.

19. The system of claim 11, wherein the first data storage system includes an aggregated data storage location, a metadata storage location and an error recovery information storage location, wherein the aggregated data is stored at the aggregated data storage location.

20. The system of claim 19, wherein after transfer of the aggregated data to the first data storage system, corresponding metadata is transferred to the metadata storage location and error recovery information is transferred to the error recovery information location.

21. A method for recording network usage including storing network data in a multiple level data storage system, the method comprising the steps of:
defining a set of first level network data collectors;
receiving a first set of network accounting data at each first level network data collector, processing and storing the first network accounting data set at the first level network data collector;
defining a second level network data collector;
receiving the first network accounting data set from one or more first level network data collectors, processing the first network accounting data set to produce a second network accounting data set, and storing the second network accounting data set at the second level network data collector.

22. The method of claim 21, further comprising the steps of:
defining a third level network data collector; and
receiving the second network accounting data set at the third level
network data collector from the second level network data
collector, processing the second network accounting data set to
5 produce a third network accounting data set, and storing the third
network accounting data set at the third level network data
collector.
- 10 23. The method of claim 21, further comprising the step of defining an
application interface; and receiving the second network accounting data set at the
application interface.
24. The method of claim 21, further comprising the step of defining the first
15 level network data collector to include a query manager, wherein the second
level network data collector is in communication with the first level network
data collector via the query manager.
25. The method of claim 21, wherein the step of processing and storing the
20 first network accounting data set via the first level network data collector further
comprises the step of converting the first network accounting data set to a
standard data format.
26. The method of claim 21, further comprising the step of defining the first
25 level network data collector to include a first level data storage system having a
first processed data storage location, a metadata storage location and an error
recovery information storage location, wherein the first network accounting data
set is stored at the first processed data storage location.
- 30 27. The method of claim 26, further comprising the steps of transferring
metadata to the metadata storage location and transferring error recovery

The method of claim 1, wherein the aging policy for the first network accounting data period corresponding

The method of claim 1, wherein the aging policy for the second level aging policy is

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